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Reports
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INDUCTIVE CASE STUDY FOR RODEO-
CHEDISKI
APACHE-SITGREAVES NATIONAL FOREST

Final Report

Cooperative Agreement 02-JV-11221617-037(3)

Between

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Inductive Case Study for Rodeo-Chediski
Apache-Sitgreaves National Forests

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April 8, 2003

Introduction

The Rodeo and Chediski fires started on June 18 and 20th, respectively. These human-caused fires burned separately before joining on June 23. This fire complex directly affected a large area of northern Arizona along the Mogollon Rim, from the community of Show Low on the east to Forest Lakes on the west, as well as the Fort Apache Indian Reservation. By the time the combined fire was contained on July 7, it had burned over 460,000 acres and destroyed more than 400 homes and outbuildings. Over 32,000 residents were evacuated from the communities of Show Low, Summer Pines, Pinetop-Lakeside, Linden, Pinedale, Clay Springs, McNary, Forestdale, Heber/Overgaard, Aripine, and Forest Lakes (USFS, 2002). Evacuees went to Red Cross and Salvation Army shelters or stayed with family and friends in nearby, unaffected areas along the Rim as well as in the Phoenix area. Residents were allowed to return from a few days to two weeks after the fires.

Table 1. Rodeo-Chediski fire complex timetable.

Rodeo Fire Ignition: June 18, 2002 Chediski Fire Ignition: June 20, 2002				
EVENT	Show Low/Pinetop/Lakeside	Pinedale/Linden	Heber/Overgaard	Forest Lakes
Evacuation	June 22	June 18	June 20	June 22
Return	June 29	June 29	July 2	July 3
Date of Loss	N/A	June 18	June 22 and 24*	N/A
Structures Lost+	None	166**	303***	None

* Fire Burned through the community twice.

** Includes Clay Springs, Timberland Acres, Pinedale Estates, Cheney Ranch, Aripine

*** Approximately 260 structures burned on June 22, and 30 on June 24. Includes Bison Ranch, Pinecrest Lake.

+ Total number of structures lost: 491

Although the name most used by the media and agencies for the fire is the Rodeo-Chediski fire, people in the affected communities generally called the fire by one name or the

other. In the Forest Lakes and Heber/Overgaard areas, it was the Chediski fire that threatened or burned through the communities. The two fires had not burned together when these areas were affected and residents on the west end refer to the Chediski or Rodeo fires.

Methods

The interview data for this preliminary social assessment were gathered and analyzed using grounded theory, a qualitative, inductive approach to understanding social phenomena. The process builds an increasingly complex representation of the social dynamics under study through interview questions. In this approach, insights emerge from the data, in contrast to testing data against predetermined hypotheses. Typically, observed patterns emerge early in the data collection and are then tested with additional observations. Data collection is suspended only when patterns stabilize and no novel information is forthcoming from later observations (Strauss and Corbin, 1990). The social phenomena of interest in this study were the local social impacts of wildfire at different levels of organization, i.e., individuals, households, neighborhoods, and communities.

In this case, in-depth, semi-structured interviews were conducted with residents in communities directly affected by the Rodeo-Chediski fire complex. The study area included the communities directly impacted by the fires along the Highway 260 corridor. This area was bounded by Forest Lakes on the west and Show Low/Pinetop/Lakeside on the east. Initial interviewees were selected on the basis of referrals from U.S. Forest Service managers and knowledgeable "locals." Other names were then obtained via chain referral. Interviewing took place in October and November of 2002. In total, 75 interviews were conducted by two highly experienced field workers. Interviewees were asked about the following topics: economic and

health impacts, preparedness, information and communication, community capacity, rehabilitation and salvage, and desired future for the forest.

Due to the qualitative and inductive nature of the study, *theoretical* or purposive, rather than statistically based sampling (Glaser and Strauss, 1999; Charmaz, 2000) was used to select interviewees. Theoretical sampling focuses on identifying and then sampling from relevant categories of interview subjects rather than on the basis of their statistical frequency or distribution in the population. Thus categories of subjects relevant to the social phenomena are identified and then sampled from, rather than randomly selecting subjects from a given population (Singleton and Straits, 1999). In this study, the categories of interview subjects included personnel from firefighting agencies, evacuees, ordinary full-time and seasonal residents (some who suffered property damage, some who did not), local physical and mental health care providers, business owners, and local, state, county and federal government officials. The number of respondents interviewed is thus a function of the complexity and diversity of the population relative to the issues of interest to the research rather than the size of the population. Although the results are not suitable for statistical analysis, theoretical sampling, because it is purposive, allowed for the capture of a broader and richer range of local experiences from this fire event than would have been possible using a random sample approach given the time and resources available for the assessment.

Geographic Dimensions

In addition to differences in fire impacts between reservation and non-reservation communities in the White Mountains, it is also fair to say that different territorially-based clusters of communities outside the reservation also experienced the fire differently. Early in the

field work it became clear that the fire event was experienced quite differently in different locations within the area. These differences were a function of how the fire behaved in different places but also, and perhaps more importantly, the character of the communities involved. On the basis of these different experiences the analysis has identified three broad community impact zones: The Show Low/Pinetop/Lakeside area, the Pinedale/Clay Springs/Linden area and the Heber/Overgaard/Forest Lakes area.

Show Low/Pinetop/Lakeside

These communities (particularly Show Low) and their surrounding subdivisions are widely described as the economic hub of the entire White Mountain area. Although there are many long-time year round residents in these communities there is also a sizable population of seasonal residents who make their living elsewhere, some of whom have very substantial homes in the area. For many full-time residents and perhaps especially seasonal residents, scenery (and in particular the presence of trees), is a major part of the quality of life in the area. Much of the local economy is dependent on both seasonal residents and tourists who come to escape the heat of the Phoenix summer and to ski in the winter. As the fire season of 2002 played out, trees became a locally talked-about issue in at least two senses. One was that the presence and juxtaposition of trees in the immediate area around homes and buildings, (particularly small diameter conifers with their accompanying dead branches, needles, litter, etc) had over a period of years become a major fire hazard in many neighborhoods and developments. The hazard to at least some homes and subdivisions had been reduced through the efforts of a local extension forester and others who for several years had disseminated information about making neighborhoods more "firesafe" and who helped to organize a local group to do "firesafing "

work. However, the magnitude of the local fire hazard remained daunting. Secondly, the Rodeo fire when it did break out threatened not only the homes in the communities but also the quality of the setting that led many people to locate in the area in the first place or to visit the area as a tourist. Thus, the way of life and the economy of the “economic hub” of the White Mountains were both threatened by impending fire.

The following is an excerpt from an interview with the Show Low fire chief, who described from his perspective how the fire event itself played out in his community:

...Well, it's kind of interesting, I was actually in Dallas at hazardous material trainer program, I got the initial call and they said to just to give me a heads up that the fire did start down in Cibecue and I wasn't real comfortable with that at the time and then I got a call that night saying they said they had it contained... and I still wasn't comfortable so I told them to be sure to call me back at daybreak the next morning. They called me and said it had jumped, so I made arrangements to get on a plane and get home, and I was home that afternoon. But its fire behavior didn't surprise us a bit. I knew when they called me we were in trouble, and we all knew we were in trouble at that time, so it doesn't surprise us a bit. When I got back and we saw the fire behavior and what was going on, I at that time, well, we obviously deployed crews out into the neighboring areas to help on the attack, but I recognized our problem and this thing was just not behaving like we had hoped for. So I initiated a state-wide mutual aid call for additional resources for Show Low. I got a hold of the Pinetop chief and Lakeside chief and asked them if they wanted me to get enough resources to protect their communities also. And when I say resources to protect the communities, my intent was to get municipal departments in here to take care of town, so we could deploy all of our resources out in the woods, because we couldn't do both. We couldn't protect our towns plus the interface problem. So I initiated that about 4

o'clock in the morning and by that afternoon we had Phoenix, Gilbert, Meza, Tempe units up here, real quick.

We stayed out there for a couple of days and then as this thing got closer, we had some trigger points out there, it was prudent for us to get back and start doing some of our pre-fire preparation. Prior to the fire, we had been working real hard all spring and pumping information and home treatment systems and fire-wise things. But as the fire was coming, we felt there were some additional things we could do. And so as we got all of our troops back and basically what happened was that Larry Humphreys of the management team, Humphrey management team, made Show Low, Pinetop, Lakeside what we call the Show Low Structural Division. And we operated as a separate division and so we combined our three fire departments, Show Low, Pinetop, and Lakeside, and they all came down here while we had Phoenix units up there taking care of their homes. We all combined our resources and started cutting a line all the way from Highway 260 around the south and west end of Show Low to Highway 60 by hand. We went in and cleared, we didn't clear-cut it, but we went did some treatment, about 100 feet wide all the way around. And it took us 2 ½ days to do that and that was kind of our last stand, our Custer's stand. We knew when that fire came; our last shot was to start back firing from our treated area. And if we didn't stop it there, it was coming in town. We did some triage and we were probably prepared. Well, I don't know if you can ever be prepared, but we knew we were going to lose about 800 homes right off the bat as indefensible in that particular end of town. It's a heavily wooded area with mobile homes and summer homes in there. We knew that if we couldn't keep it out of town, we're going to at least experience that loss. So we were trying to do everything we could to stop that from happening.

(Then what happened?) We just kept hanging in there, we played the spot fire game, and we had the Phoenix units in town chasing spot fires in town as they happened. We had our crews deployed out in task forces at the perimeter of town and as the fire was approaching, we would get spot fires in the forest and we would go out and fight those and handle those, trying to keep that buffer in between us. We deployed lookouts all over the place and we did a lot of communication and quick attack stuff on the perimeters of the fire itself. (And this event went on for about a week?) A week. (It all came to an end how?) The fire god finally smiled on us a little bit, you know. We got some change in weather; you know it was kind of interesting to watch. Every morning about 4 o'clock we'd all get up, the first thing everybody did was run outside and look at the flag, see what the flag was doing. And the majority of the time, we'd look out and the flag was waving to the east, which is not what we wanted. But finally, one night it held, I think that was Thursday night the fire held. Wednesday night the fire died down and that was the first time it had died down, so we got a little excited about that. It kicked up Thursday morning and then it died off Thursday afternoon when we expected the fire behavior and it kind of died, so things were happening then. Thursday night it held and we got real excited and said if we can just hold it Friday, we're good. It laid down Wednesday night, Thursday and Friday, and Saturday a decision was made to let people back in, because they worked real hard those nights to get some containment, and those were the first nights that we ever got containment on the fire.

As the above interview excerpt indicates, the Show Low/Pinetop/Lakeside area was evacuated early in the fire event. Evacuation and the accompanying uncertainty caused anxiety, disruptions both in residents' day to day lives and in the operations of the many businesses in the communities. Smaller businesses in particular suffered as a result most notably those with

perishable inventory such as plant materials and nursery stock. In the end however, the towns proper were spared the brunt of the fire. If this had not been the case and these towns had burned, many who were interviewed for this study feel the entire White Mountain region might have suffered nearly irreparable economic harm.

Pinedale/Clay Springs/Linden

While the communities in this cluster are geographically proximate to Show Low, they are quite different historically, socially, and economically. Although these communities have only fire and school districts as units of local governance, they are characterized by a significant church presence with the Mormon Church being particularly strong in the area. With a history of timber dependence, these communities suffered economically as a result of the virtual disappearance of that industry. Looked upon from this perspective, the fire may be seen (particularly for full-time residents) as one more event in a series that have challenged the communities over the last two decades.

The evacuation order for the Pinedale/Clay Springs/Linden area came about noon on June 18th. The following is an excerpt from an interview with Linden's fire chief describing the drama she and her community faced that day:

...My engine was all ready there my first out engine. We ended up with all the Rim [firefighting] group [and] set a structure engine and a tender. That initial attack in Pinedale was good. When the Type 2[federal firefighting] team got established, we all went in there. The structure engines were put two different places. I had one of my brush trucks and the chief from Heber/ Overgaard was wetting down the helipad. We went back into IC {Incident Command} headquarters and they came in [saying] "...no, this is gone-this is bigger than we think". I think

that was the time they ordered out the Type 1[federal firefighting team]... The fire front on that fire was at least five miles. When I came back out of IC headquarters and they released my structural engine [I] brought [it] back here because they pulled everybody out because it got too dangerous. They brought them back here. I went on the 300 Road to see what the fire front was to look like and I'm telling you and it was at four to five miles; it was a front of that fire. That fire was moving in like nothing I have ever seen in my life or even seen a picture of it. [I] remind you this was at night when fires lay down. Well like I said, I was all ready evacuating everything. They pulled everybody [meaning all firefighters] out. Pinedale put them back into staging [and] brought them over here. We have a staging area here. Then we moved the IC headquarters over here and set up at the Linden school. The fire was advancing so fast we moved- got [out of] Linden school and went to Show Low. The sheriff's headquarters [was] here at the station- again the fire was moving so fast they couldn't stay here, they had to pull out. This was all on the 18th within 24 hours.

The Pinedale/Clay Springs/Linden communities and neighboring unincorporated subdivisions suffered the bulk of structural losses from the Rodeo fire. These losses included the fire station at Pinedale. Figures from Navajo County (2002) show that 166 structures in this area were burned, with most of those (106) in the Timberland acres subdivision.

Heber/Overgaard and Forest Lakes

The economies of the communities of Heber/Overgaard in Navajo County were once based on timber and ranching but are now highly dependent on recreation and tourism. The area is unincorporated and has a county approved general plan for growth and development and an area-wide Chamber of Commerce. These are two distinct communities; however, residents and

the General Plan commonly refer to them as a single entity, Heber/Overgaard. Despite the influx of part-time residents and retirees, there are a number of families that have been in the area for several generations. Residents describe the communities as a place where “everyone is either a friend or a relative.” Many part-time residents have been coming to the area for years and are active in the community. Forest Lakes is an unincorporated subdivision about twenty miles west of Heber/Overgaard. This is primarily a community of second-home owners. The year-round population is about 200 people, while the summer population jumps to over 1,000.

What made the experience different in Heber/Overgaard and Forest Lakes according to those interviewed was the short notice for evacuation, the high number of homes lost, the lack of media coverage, the length of evacuation and the delay in finding out about burned homes. In addition to those factors, some residents were evacuated twice, once from Heber/Overgaard, and then from Show Low. The Chediski fire burned through Heber/Overgaard on two different occasions, destroying homes in different areas each time.

The Chediski fire started on June 20th, two days after the Rodeo fire started and quickly spread out of control. Extreme fire weather conditions, low fuel moisture, heavy fuel loads, and few firefighting resources were contributing factors. Resources were stretched thin due to the Rodeo fire as well as other large fires in the western United States. Local fire departments assigned to the Rodeo fire came rushing back after the Chediski fire broke. High winds pushed the fire to 14,000 acres by the second day. Heber/Overgaard was evacuated the day the fire started, on June 20th and the fire burned through town for the first time on June 22nd. It burned through town again on June 24th. Residents had little time to prepare for evacuation. In post-fire interviews, a number of respondents from Heber/Overgaard lamented that they had not taken enough with them. They were told to prepare for a couple of days but were not able to return for

two weeks. Highway 260 was closed and residents could not return until the evacuation order was lifted on July 2. The hardest hit areas were the mobile home community of Pinecrest Lakes, Bison Ranch, and the Buckskin-Artist Community. The following excerpts from an interview with the Heber/Overgaard fire chief convey (in his words) "...what eventually became 'unnamable' ...":

...If we thought that a neighborhood was going to be in harm's way, we would go ahead and cut some of the trees so it would be ready for the fire. That worked in some respects, but in some respects it did not because the fire did not do exactly what we thought it was going to do. So on Saturday evening about 5:00 [we were waiting for the] fire to hit us, and it hit out here in Overgaard, east of us here and it hit with a tremendous force. It came through with some tremendous wind- flame fronts of 200 feet and temperatures up to 2000 degrees. Houses are literally bursting into flames before it even got there. Saturday night our guys worked clear into the early morning hours and that night we lost the well over 200 structures. We were up all night and I can tell you that the people that worked in this office and in this department did not sleep for the first three or four days for over an hour a day.

On Monday that fire hit us again and then this time it came in to the west of us and came through up by Buckskin Canyon and it beat us up pretty good that day too. We lost well over 30 or 40 structures that day, so it was a pretty tough day.

Evacuated residents from Heber/Overgaard had difficulty finding out about the condition of their homes. Calls to the Navajo County hot line set up for that purpose resulted in little or no information at first. Verification of losses was time-consuming, as described later in this report. Residents relied on accounts from those who had stayed behind for information; that was not

always accurate. Several said that they studied the news footage of the burned area to look for their standing or burned homes.

According to respondents, (television) media coverage of their communities was sparse and inaccurate; most of the stories focused on the Show Low area. The experience of “not knowing” what was happening to their homes and communities was “horrible”, they said. Residents faced another trauma when the fire burned through Heber/Overgaard a second time. Those who had not lost their home the first time had to worry again.

Residents of Forest Lakes were also threatened by the Chediski fire, and were evacuated on June 22nd. Not only did they have more time to prepare for evacuation, Forest Lakes residents had more time to wait for the fire to approach and burn their community as it had burned through Heber/Overgaard. The fire came to within one mile of Forest Lakes in the last days of June, but did not enter the community despite earlier predictions. Construction of a firebreak, a back-burn, and improved weather conditions kept the fire out of Forest Lakes. A Forest Lakes resident describes the fire shortly before being evacuated:

...Well, the smoke it was like a tremendous thunderstorm moving in coming up from the South. I will never forget the sight. It was a big plume. [We were] waiting for thunder and lightning and there wasn't any, but every now and again you can see a flash of red and these big clouds coming up over there. It was almost like you were in a dream. It just wasn't happening but there it was...

Heber/Overgaard suffered the greatest (numeric) loss of buildings of all communities affected by the Rodeo-Chediski fire complex. According to Navajo County (2002) statistics, 491 improvements were destroyed in the fires county-wide. In the Heber/Overgaard area, 303

structures were lost as compared to 188 structures in Pinedale/Clay Springs/Linden and Timberland Acres. No buildings were lost in Forest Lakes or Show Low/Pinetop/Lakeside.¹

Residents of Heber/Overgaard returned on July 2nd. Despite little preparation time, they were able to plan and pull-off the annual Fourth of July parade. This was described as an act of togetherness and strength.

Impacts

A consensus has yet to emerge in the literature concerning the specific types or categories of impacts one should look for in conducting social assessment in the wake of fire events. In fact this project is one of a series of case studies conducted with the intention of beginning to develop such an understanding. Thus the field workers used an interview protocol that was developed largely from Krannich et al. (2002) which, in turn, reviewed the broader social assessment literature for starting points in developing fire-related social assessment. What is contained in this document is a discussion of significant social/community impacts actually uncovered in fieldwork.

This section of the report describes the major kinds of local impacts interviewees reported having resulted from the fire event, *as they saw and experienced them or as such impacts could be inferred from such interviews*. It should be noted that the authors are neither medical experts nor economists and thus discussion of impacts in those areas in particular is based on what was reported by knowledgeable local experts and key informants.

¹ As of the writing of this report, Navajo County estimated that over 500 structures had been lost. Updated statistics regarding the final tally of structures lost had not yet been issued by the County.

Health and Morbidity

There were no reports of deaths associated directly with the fires either of firefighters or of local residents. However, at least two knowledgeable local sources (one the chief of nursing at the local hospital, the other a longstanding local official) expressed the opinion that a number of elderly people (perhaps a half dozen) may have died somewhat prematurely as a result of the trauma of the evacuation, a return home to an altered environment, and the disruptive impact of the entire fire event.

Although the local hospital at Show Low was evacuated along with the rest of the community, officials reported no serious health consequences from the evacuation or any specific serious illnesses as a result of the fire itself. They did mention fairly widespread respiratory irritation and discomfort as a result of smoke from the fires.

Physical Damage to Private Lands

About two percent of the total acreage burned, or 8,169 acres were private land (White Mountain Apache Tribe, 2002) much of that moderately to severely burned (Table 1). Homeowners with burned property faced many challenges on returning. Those without damage also faced threats from flooding from burned areas upstream. Threats also exist from hazard trees. Additionally, returning to a burned landscape has had an emotional impact on residents (see below). The amount of work needed in the fire's aftermath was daunting. For example, it was estimated that 75,000 burned trees needed to be cut in Timberland Acres alone (Shaffer, 2002).

Table 2. Acreage burned by jurisdiction. (White Mountain Apache Tribe, 2002)

Ft. Apache Indian Reservation	280,992 acres	60.16%
USDA Forest Service		

Apache-Sitgreaves NF	167,215	35.80%
Tonto NF	10,667	2.28%
Federal/Tribal Lands Total	458,874	98.24%
Private Land	8,169	1.75%
State Wildlife	23	0.01%
Total	467,066*	100%

*As of July 7, 2002

County, state and federal agencies and volunteer groups responded to help landowners with the cleanup, rehabilitation and flood control. For example, the Natural Resource Conservation Service (NRCS) set up a recovery center in Heber/Overgaard that served for several months as a “one-stop” shopping place for homeowners seeking assistance. Agencies at this center included NRCS, Arizona Game and Fish, Cooperative Extension Service, USFS, Navajo County, and Federal Emergency Management Agency (FEMA).

Cleanup

At the time of the interviews, many landowners were at or just finished with this stage relative to their homes and yards. (This was not the case however for many landowners with forest holdings-or indeed for all homeowners-see below) The first step for most property owners was to work with their insurance company to see what was covered regarding cleanup and debris removal. Those who had done this and received reimbursement were nonetheless dismayed at the cost of labor, dumpster rental, and hauling. A few complained about price gouging but felt that they had no recourse for help with either the work or redress. Volunteer groups organized through the White Mountain Recovery Partnership were able to help those without resources pay for such services. FEMA offered loans for cleanup through the Small Business Administration. Those who did not qualify were referred to a state program, the Individual and Family Grant Program.

Navajo County developed a Debris Removal Plan to address fire-related debris disposal, but not cleanup of private property. Residents could take fire-related debris to dumpsters located in several areas around the county: Heber/Overgaard, Aripine, Timberland Acres, Pinedale, Pinedale Estates, and Clay Springs. The Heber/Overgaard Sanitary District and the Forest Service established a woody debris disposal pit and Navajo County started a tree-chipping program with assistance from the National Emergency Grant Wildfire Disaster program. Landowners who had cut and bucked burned trees could request a chipping crew to come out and chip trees on site.

Erosion and Flood Control

The NRCS Emergency Watershed Protection (EWP) Program, in partnership with Navajo County provided 2.9 million dollars for erosion and flood control work on private lands in the burned area. This program pays up to 75 percent of the cost of emergency measures that protect lives and property from the effects of flooding and erosion. The remaining 25 percent of the cost is picked up by the landowner in the form of cash or in-kind labor. Emergency measures covered include seeding, straw mulching, and straw bale check dams. Navajo County started a program to spread hay on burned areas for erosion control and offered sandbags and sand for homeowners.

In addition to this program, Navajo County informed property owners in or near the floodplain of several washes that they faced the risk of flooding due to the loss of vegetation and ground cover in these watersheds. At the time of the interviews, Buckskin Wash near Heber/Overgaard had flooded, though interviewers learned of only a small number of homes and yards (in Pinedale) sustaining water damage from flooding. In Timberland acres, flooding and

erosion had blocked culverts and damaged roads. Residents of all three areas were concerned about future flooding.

Jobs and Income

There was a short-term disruption in household income flow during the fires. The fires hit at the peak of the tourist season, just before the big Fourth of July weekend. Businesses and employees lost two weeks of work because of the evacuation. The recreation and tourism sectors were especially hard hit. Many of those who were temporarily laid off were eligible for emergency/disaster unemployment assistance. However, this assistance does not replace lost wages or salary completely; it can take weeks to months to recover from the lost wages according to interviews with the Arizona Department of Economic Security (DES) personnel. DES estimates that about 400 people applied for emergency assistance. Approximately 30 of those were self-employed. Those self-employed individuals who paid into the unemployment insurance program were eligible for benefits, but since many self-employed do not do so, they would not have received any assistance.

As of early November 2002, through the Dislocated Worker Program, Navajo County was able to employ approximately 85 people in a fire debris chipping program. All but 3-5 eligible workers had found positions with this program. This chipping program was funded by a National Emergency Grant and was expected to operate until December 2002 or possibly as late as February 2003. Extended funding was not certain leaving the long-term future of the program in doubt.

Navajo County unemployment statistics by populated area for the summer months 1999-2002 are shown in Appendix A. Although they show a noticeable increase in the County

unemployment rate during July-September 2002, this increase appears to fall within the normal fluctuation over the four-year time period. Community level statistics for Show Low and Pinetop/Lakeside reveal a similar pattern. Heber/Overgaard, however, had a relatively large increase of about one percent during July, and over one-half percent in August and September of 2002. The yearly average for Heber/Overgaard does not show a significant variation. Despite the impact on the economy from the Rodeo and Chediski Fires, 1999 appears to be the worst year at the County and community levels.

Self-employed people and seasonal employees may have been hit the hardest. A retiree who runs a travel business out of his home said that he did not receive a business call for two months after the fire. The process of cleaning up and starting over limited people's ability to think about vacations or any other type of travel, he said. There are anecdotal reports that many of these self-employed businesses did not survive.

Some employers helped their employees by paying them for the lost time. For example, an employee of a convenience store in Heber said that the corporation placed evacuated workers in other locations in the state and/or paid them for 80 hours extra. She went to Show Low to work and was later evacuated from there.

Speaking of the impacts on the local economy in Show Low, one informant said:

...During the fire, of course the impact was tremendous because the city was evacuated, so there was the impact of a week where there [were] zero sales. In fact [in] the city of Show Low, we didn't receive any sales tax from that time period, so it hasn't yet, but it will impact us when those taxes come in. After the fire, now, a lot of places, their business went down and they were impacted, I know some people were down as much as 25%. Here at the [grocery] store where I work, we weren't impacted as hard because everybody had to refill their refrigerators, so we did

have good business. But, yeah, the businesses were impacted, but I think they're starting to come around now. And I think in the long run, this is going to be a construction economy, because those people are going to rebuild out there...

Some businesses such as restaurants, grocery stores, and gas stations came out a little better than others. These business owners thought they had at least broken even. Although these businesses were closed during all or part of the evacuation period and lost perishable stock, they made money on the post-fire “tourist” trade- sightseers from Phoenix who came up to see the damage. Those dealing with perishable goods such as food and floral items suffered losses of goods that weren’t always covered by insurance. Others made money as well. This included local federal agency firefighters and those who leased firefighting equipment such as bulldozers or water trucks.

Despite the impact on the tourism and recreation sectors, residents were optimistic about a recovery, but added that it was still too early to tell. Recovery would depend in part on how visitors perceive the damage from the fire and recreation opportunities next summer (2003). There was concern that the media portrayed the whole area as devastated and this perception will keep people away.

Impacts on Home and Property Value

Real estate prices in the area appeared to be holding steady, with only prices for view lots suffering. The area’s reputation as the closest place to escape the Valley heat will ensure its popularity and maintain real estate prices, according to real estate professionals interviewed. Most of those interviewed who lost their homes planned on rebuilding, and some were on the verge of moving into their new homes. Residents wanted to stay because of their attachment to

the area. Others reported very substantial losses in equity and while they considered moving, were forced to stay because of finances- it was less expensive to stay and rebuild than to buy property elsewhere and relocate.

Insurance

According to Navajo County, only 26 homeowners who lost their homes were uninsured. However, some interviewees said that they or neighbors who lost homes were underinsured on the home and/or contents. Interviews with those with destroyed or damaged property revealed a range of experiences with insurance companies from cooperative to difficult, with some reporting positive experiences and financial outcomes. These experiences were not tied to any particular company, but rather to the agent or type, amount and fine details of the insurance policy one had. In some cases, homeowners reported that they had been misled by an insurance agent about the nature of their coverage pre-event with very costly results in the post-fire period.

As of November 2002, insurance companies were not writing policies in the area until a review of rate structures was completed. Homeowners reported no change or an increase in insurance rates.

Emotional Impacts

The first emotional impact of the fire event experienced by most area residents was the nervous anticipation of a possible fire as the summer of 2002 progressed and forest conditions became dryer and dryer. One interviewee reported experiencing a flash of anger when he observed an "out-of-town" person carelessly throw a still lighted cigarette butt on the ground. Another interviewee (who as it turned out did not lose his home) reported beginning to move

precious possessions from his home to an out-of-the-area location well before the first fire broke out.

The second set of emotionally charged events was the evacuations. Although most accounts suggest that the evacuations themselves were largely well planned and smoothly executed, they were nonetheless difficult experiences for those involved. In a number of cases people were evacuated twice, once from various outlying areas to Show Low and a second time from Show Low itself. Some people went to evacuation shelters at Springerville, Holbrook, Payson and Snowflake; more, however, found shelter with relatives outside of the White Mountain area, many in the greater Phoenix area.

The evacuation experience, as one might expect, was disorienting and disconcerting for many people. It was perhaps the worst for those (including local public safety officials) who were away (or immediately called away) from home when evacuation orders were given and were unable to return to retrieve belongings. There is one very dramatic story of the rescue of two dogs whose owners were on vacation. The neighbor who was feeding the dogs was unable to transport them to safety. A local veterinarian drove a considerable distance to rescue the dogs with literally minutes to spare before the house and property were engulfed by the fire. The dogs escaped with only singed coats while the owners followed the events via periodic reports over the telephone.

Those who experienced the evacuation often described the suspense concerning the condition of their homes and property as excruciating and full of moments of great hope and others of despair. Timely accurate information was hard to come by. Several interviewees described calling their home telephone answering machine until it would no longer function and then assuming that their house was gone.

Many local interviewees described the Phoenix area television news coverage of the events as insensitive, frustratingly sensationalistic and often inaccurate in terms of place names and the conditions in specific locations. At least one family learned its home was lost by seeing it burning on television. The local (Show Low) radio station (which continued to broadcast from a remote site) was generally seen to be much more accurate in terms of specific information. Many did have friends (public safety officials etc) who remained in the area and reported on property conditions.

The return for those whose homes or neighborhoods were burned was devastating. Little was recognizable- the landscape, neighborhoods and homes were destroyed. Smoke and ash limited visibility. Homes and businesses that were not destroyed suffered damage from smoke and ash; food had rotted. Residents faced a huge cleanup task. Donations of labor, services, money and materials poured in from across the state and nation. While these were needed, donations created problems of distribution and charges of misappropriation. Sightseers drove up from the Valley to see the devastation, and in some cases, to scavenge through the remains of burned homes in search of valuables.

Quite understandably, the loss of a home whether a primary residence or a summer residence was a very difficult emotional experience for virtually everyone who lived through it. The process of learning whether ones home was intact or not was itself often an ordeal. Some interviewees received such information via a telephone "hot line" set up by county government, others received information through informal means but some learned the fate of their homes visually on bus tours organized by local law enforcement agencies. Several interviewees said that the bus tour was the most difficult experience because of the public nature of it and the inability to leave the bus and walk through the property.

Most interviewees said that family pictures were the most important items to save and those who could not do so found this to be among the worst parts of the experience. As was noted above, the family level financial impact of losing a home and associated property was quite variable depending on whether one had property insurance and on the fine details of individual insurance policies.

One striking theme in the interview data was, in the case of burned neighborhoods, the extent to which visual resource damage—burned trees and landscapes—resulted in deep emotional impacts for residents. A number of interviewees said the loss of treasured views was far greater than the loss of homes themselves—“because the homes can be replaced” but the landscape may not in a human lifetime look or feel the same. One interviewee stated that after several weeks she had finally begun to get used to the blackened landscape out her window, but that every time she “ran to town” and then returned, her trip through the neighborhood triggered a reenactment of her grief process. Another emotional reaction was that of landowners (particularly older ones) confronting and being overwhelmed by acres of dead trees on their own property to be removed, and in many cases, having no idea of how to get it done.

Loss of Place: Recreational

Both year-round and part-time residents of the area enjoy hunting, fishing, hiking, cross-country skiing, and camping and had special areas that they returned to year after year. Many of these areas were “out the back door” or non-developed areas. Residents rarely mentioned the loss of developed recreation sites such as campgrounds or picnic areas. Instead, interviewees mourned the loss of their special areas as well as the forest landscape. They lamented the fact that the big trees would never come back in their lifetime, or even their children’s lifetimes. One

interviewee said that he had gone to one of his favorite spots, Black Canyon Lake, some weeks after the fire and would not go back again; the devastation was too much. Others expressed similar sentiments: they had also visited the forest after the fires and were deeply saddened by the burned landscape. Horseback riders lamented the loss of trails outside their back door. The ease of access to trails was an attraction, and now they weren't sure where they would find riding opportunities. Several elderly couples said that they enjoyed driving on the forest roads, but after seeing the post-fire landscape, they weren't sure if they would go again. Still others have not gone out to the forest and to their favorite areas at all yet; they cannot bear to see the changes. Some residents were concerned about the welfare of wildlife, particularly big game animals, and wildlife habitat. One hunter had gone to his traditional hunting site and was depressed after walking through the area and realizing it would be years before it recovered. At the time of the interviews, people were not certain how or if hunting seasons would be affected. Others wondered about the effect of flooding and siltation on fish and fish habitat.

Community Cohesion and Conflict

Cohesion

The interview data suggests that the fire event had both a galvanizing and a disintegrating effect on the communities in the study area. In the case of the former, almost every interviewee volunteered the observation that people and organizations in the communities "pulled together" during and in the immediate aftermath of the fires. This "pulling together" took the form of such things as volunteer help with evacuation, sharing food and needed supplies, providing needed transportation and information, clearing burned material from people's yards, providing shelter

for those who were burned out and providing emotional support and comfort. During the fires themselves, local retail businesses opened their doors to provide services and supplies to firefighters and volunteers. A local cell phone company in Show Low gave free use of cell phones to any evacuees who asked, for the duration of the evacuation. Volunteers hauled people's horses and other pet livestock to safe places. Local radio station personnel worked heroically long hours to provide news coverage during the event. Local public safety officials worked to the point of exhaustion and then some during the event. Neighbors helped each other pack, move, and evacuate; they kept each other informed during and after the fire. After the fire, they assisted each other with cleaning up and provided shelter for those without homes. A local grocery store in Show Low provided free breakfast food to returning evacuees

The other side of the coin is that the fires resulted in a number of levels of conflict among various groups affected by the events. In some cases, these were extensions of existing tensions, in others, new conflicts were emergent.

Cultural Tension/Conflict

Cultural conflict was manifest in the statements of a number of interviewees in the non-native communities that the BIA and the tribe "did not do enough" in the crucial early hours of the Rodeo fire while it was still entirely within the boundaries of the Fort Apache Indian Reservation. These individuals made much of the fact that the BIA fire team felt it was unnecessary to accept any suppression help from the Lakeside Ranger District during the first day of the fire. Among the unsubstantiated rumors circulating was that before the fire could be fought on particular reservation lands, a tribal "Holy Man" had to be brought in to "bless" particular places.

BIA and tribal officials disputed the rumors and the criticisms concerning the level of effort and deployment of resources during the first day of the fire, making the case that they did everything one could reasonably expect to do during the initial attack, describing at great length the amount of equipment and the number of personnel deployed during the early minutes and hours of the fire. One official even went so far as to create a PowerPoint presentation which was shown to local audiences describing the early firefighting efforts within the reservation boundaries.

The mayors of Show Low and Pinetop did much to alleviate cultural conflict stemming from the fire event by publicly pointing out that the tribe had been conducting a fairly aggressive prescribed burning program on tribal forest lands situated adjacent to their communities and, had this not been the case, that the probability of the fire moving into the two communities would have been much higher.

Local vs. Federal Tension/Conflict

The research uncovered two main foci of local versus federal conflict in light of the fires. One of these concerned the firefighting itself. Some residents of Heber/Overgaard/Forest Lakes and particularly Pinedale/Clay Springs/Linden blamed the BIA and Forest Service for letting the fire get out of control by what they viewed as non-aggressive initial attack. They also blamed the Forest Service for the loss of homes and property. In this regard, the Forest Service (Type 1 Team) was accused of, in effect, letting homes burn by not allowing firefighting equipment into threatened residential areas at critical times. "Equipment was lined up along the highway and they didn't use it," was a common refrain. Non-agency personnel involved with the fire (contractors, etc) added that the daily shift changes as well as the Incident Management Team

changes led to downtime when people and equipment were not being used effectively, thus indirectly leading to loss and damage of property. In the case of Pinedale, this conflict reached the point that local volunteer firefighters rebelled against the incident command system for a time and earned the moniker of “renegades” in the local press. This controversy also led to the resignation of the Pinedale fire chief and his replacement with leadership that favored more aggressive and independent action on the part of the local fire department.²

The Linden fire chief had this to say about her relations with the Type 1 Team leadership:

...We played with the two or three days [when] the Type 1 team came in and wouldn't let my people participate. We had 30 volunteers at the time down there with their homes burning. Three of my guys lost their homes. We had places in the Timberland Acres area here that burned badly ...we lost most of our homes. It's so treacherous with the hills, streets, cul-de-sacs- that unless you know the areas you're lost in there. I kept telling the Type 1 team that we have million dollar homes in this area. Well, the Type 1 team far as I'm concerned wrote us off and didn't do anything for us; they were gone to protect their little Show Low... and everything else. That is only my perception but I was out there long enough to know where the line was cut and they were not being cut in my fire district, so I had to have words with them, very irate words.

Once we got it straightened out that my area was just as important, my homes were just as important as any home that any body had to fight fire on, we got together and everything went smoother. At that time they understood what I was trying to tell them about the terrain and Timberland because you cannot get around you cannot find it. Their crews got lost in it and got scared, so then they let my manpower go in and help them. My manpower I kept asking them,

² It is not the place of the authors of this analysis to reach any judgments about the efficacy of federal or local firefighting any more than it would be to take sides in forest environmental conflicts. What is appropriate for present purposes, however, is to document the conflict and comment on its potential impacts on future federal/local relationships in the study area.

"Please just let my guys go in. I don't care what you do with them," I told one guy with the team, "but you have to keep them busy if you don't they are going to go out on their own." Well they finally got my guys to go to work; it took every one of us in Timberland Acres to put out the fire.

It should be noted that this level of conflict was far from universal and that city officials from the Show Low/Pinetop/Lakeside area and from the county were effusive in their praise of the Type 1 teams and their leadership.

Another point of conflict was between some local people and the Federal Emergency Management Agency (FEMA), which moved a field office into the area in the aftermath of the fire. Local town and county officials generally praised FEMA, pointing out in particular the programs the agency sponsored to provide wood chippers to the counties to help process post-fire brush and woody debris and the grant that FEMA sponsored which supported the White Mountain Recovery Project, a mental health and counseling effort aimed to help anyone living in the area who felt they had emotional issues related to the fire event. A couple of local law enforcement officials commented that the FEMA paperwork process for emergency expense reimbursement was arduous.

On the other hand, homeowner-interviewees who had sustained losses tended to be very critical of FEMA, saying the agency initially gave them the impression that there was a possibility of financial help and encouraged them to fill out "mountains of paperwork" Only later did FEMA inform them of the criteria for receiving help, criteria homeowners found so restrictive that they felt "never had a chance" of help in the first place. Registration and application procedures were reported as confusing. For example, when evacuees called the FEMA hotline to register, they were told that registration was unnecessary. On then going to the FEMA desk at the shelter, they were told they needed to have a registration number. On calling

FEMA again, they were told that they did not need to register. And back to the FEMA desk, and so on. This situation was eventually clarified but not before much local frustration was created.

There appeared to be a misunderstanding by residents about FEMA services as well. Residents thought that FEMA handled grants to disaster victims that could be used for housing, food and other services. However, FEMA does not distribute grants; only loans are available. This did not meet the needs of many residents, especially renters, who stated that they needed a one-time injection of cash to get on their feet and keep them in place until the insurance payments began. A key informant related the tale of a single mother whose rental home burned down. She reportedly applied for and received a loan from FEMA but decided not to accept it. Her current and future financial situations were not secure enough to risk taking on a loan. Several interviewees stated that their frustrations in dealing with FEMA added “insult to the injury” of the fire itself.

Community vs. Community Tension/Conflict

As has been noted above, the fires affected each of the three community impact areas somewhat differently. As has been the case in other fire-affected localities (Carroll et al., 2000), these differences in impacts, differences in local circumstances and associated events all contributed to tensions and conflict among communities in the three areas.

Because the Show Low/Pinetop/Lakeside locale was threatened early in the fire event, (but in the end sustained the least damage to homes and infrastructure) it was the first non-reservation area to which a federal Type 1 firefighting team was assigned. It was also the area that received the most outside media attention during the fire and thus the largest number of offers of help from ordinary people and helping organizations wanting to contribute money and

other resources to aid in recovery³. All of this help and attention was not lost on the other two areas whose residents, in the end, suffered more tangible damage and loss from the fires.

Additionally, as was noted above, there was tension between some local residents and local firefighters vis-à-vis Type 1 Team fire team leaders in the Pinedale/Clay Springs/ Linden area as well as the Heber/Overgaard/Forest Lakes area. Little of this local/federal tension was apparent in the Show Low/Pinetop/Lakeside area. In fact, the Type 1 team information officer who handled most of the day-to-day media relations for the Humphrey Type 1 Team became a revered figure in the Show Low/Pinetop/Lakeside area and was invited back after the fire event to participate in a community parade. These differing experiences/views also contributed to the feeling on the part of many in the other two areas that Show Low/Pinetop/Lakeside got the lion's share of the attention, sympathy and outside help while those in the other areas suffered greater losses in relative obscurity. There were also those in the other two areas who believed that the federal firefighters were more concerned with protecting Show Low/Pinetop/Lakeside than their communities because the former represents the economic hub of the whole White Mountain Region. (It should be noted that the research uncovered no evidence to support this contention).

Within Community Tension/Conflict

The human disaster literature is replete with examples of communities suffering internal conflict and strife in the aftermath of disaster events. Although as has been noted, the field work uncovered a not insignificant amount of local/federal (Type 1 team) conflict, particularly in the Pinedale/Clay Springs/ Linden area, evidence of internal community conflicts stemming from the

³ It should be noted that this may have been *partially* due to the fact that because of dangerous conditions during the fire itself, media people were initially restricted to the Show Low/ Pinetop area but then later established an information center in Payson. For reasons of first safety and later privacy for residents who suffered property damage, access to the other communities was not granted until the evacuation order was lifted.

fire event was fairly sparse. There is evidence of conflict within the Pinedale fire department, which led to the very public resignation of the chief and several firefighters during the fire itself. The city government of Show Low was undergoing a political battle in the wake of the resignation of a long-time city manager at the time of the fire but this seemed not to carry over into the fire event itself. In the Heber/ Overgaard area there were, during the post-fire period strong feelings of anger at the woman who allegedly started the Chediski fire. These feelings led to some internal conflict between those who publicly stated they had moved beyond their anger at the woman in question and those who chose to hold on to their anger. Some interviewees told field workers that they stopped attending public meetings on fire recovery because they did not want to “deal with the anger of their neighbors”.

Community Capacity

Community capacity may be broadly defined as the ability of a local community to meet the day-to-day needs of its residents (Krannich et al., 2002). There is as yet, no consensus in the literature as to what specific dimensions of community capacity are particularly relevant or important in allowing a community to respond successfully to the threat or the reality of an uncontrolled wildfire in its immediate environment. In fact, this analysis is part of a larger effort to document empirically what dimensions of community capacity should be monitored when documenting community response to fire events. In the course of the field work for this study field workers identified four particular dimensions of community capacity which appear to have affected community response in this particular case: level of political organization, local leadership (both emergent and existing), non-governmental organizations (especially churches),

and social capital (meaning essentially the ability of people to work together to solve common problems).

The fact that the communities of Show Low/Pinetop/Lakeside suffered the least severe impacts from the fire event among directly affected communities was not simply a function of where the fire did and did not burn. It was also a function of those communities' level of political organization. The fact that there were active city governments in place allowed those communities to not only respond to the immediate fire emergency but also to attract, distribute and use outside resources more quickly and effectively than was the case for the other towns. Although county government (which is, of course common to all communities, incorporated or not) played a vital role in immediate public safety, evacuation and in certain aspects of cleanup, counties are not generally equipped to present a media image designed to attract help and support nor to receive and distribute resources the way city governments can be.

Heber/Overgaard is intermediate among the three impact areas in this regard. Although Heber/Overgaard lacks a municipal government there is an active chamber of commerce and a number of church groups which stepped forward to help rebuild community morale and to help in other ways in the wake of the event. For example, the Chamber took the lead in organizing the community's annual Forth of July parade just two days after the evacuation order was rescinded.

The Heber/Overgaard community also created the Heber/Overgaard Community Recovery Team (HOCRT) to manage an assistance fund to for uninsured and underinsured residents. This recovery team was set up and functioning before similar committees in other and often larger communities, such as Show Low. In fact, leaders of social service agencies and recovery teams in the Show Low area said that the Heber/Overgaard team was six to eight months ahead of everyone else in this regard. According to interviewees, this outpouring of

support (clearly a manifestation of social capital) was not unusual, and not necessarily limited to full-time residents. This cohesiveness and support was attributed specifically to the following characteristics of the community: the long-term ties among residents- it's an old community with old families; strong churches; familiarity with the area and the people. Mentioned as well was an "old-time dependence"- all people have is each other. You don't turn down a request for help because *you* might need help one day. Some interviewees thought that incorporation would have helped the community attract and distribute resources more effectively and were hopeful that this event would lead to acceptance of incorporation by local residents.

The Pinedale/Clay Springs/Linden area has the least developed level of political organization relying only on county government and local fire and school districts for local governance. Although most interviewees from this area expressed a preference for minimalist local government, this circumstance clearly put the area at a disadvantage in terms of attracting and using external resources to aid in recovery from the event. Even within this area there were some differences with communities such as Pinedale and Clay Springs being characterized by many of the traditional informal relationships described above for Heber/Overgaard. However the settlements of Timberland Acres and Cheney Ranch, relatively new developments, lacked both formal municipal government and the density of long-time traditional helping relationships. Some residents of these areas told field workers that they often met their neighbors for the first time while out cleaning up after the fire. One woman from Timberland Acres began to organize her neighbors to help each other with cleanup of burned material several months after the fire. As of the time of the field work, her organizational efforts seemed to be paying off as much cleanup activity seemed to be in evidence in the Timberland acres area.

Forest Lakes is similar to the Pinedale/Clay Springs/Linden area in its level of political organization. This community has a high percentage of part-time residents (over 75%), leaving it lacking in traditional, informal relationships like Timberland Acres and Cheney Ranch. The Forest Lakes Homeowners' Association is quite active and was able to maintain the community web site during the fire to provide information to evacuees. The community did not lose any structures or other property to the fire, making the ability to attract external recovery resources irrelevant, at least at this time. While interviewees in this community also described a "pulling together" after the fire, it is difficult to predict how the community might have fared if the fire had resulted in significant damage.

Churches were particularly important in the communities that lacked municipal government in terms of immediate assistance to people in need and in organizing community recovery efforts. Of the churches, the most organized and active, particularly in the Pinedale/Clay Springs/Linden area in this regard was the Mormon Church with its highly developed ward system and its tradition of stock piling food and supplies for emergency situations. In the Heber/Overgaard area, the Baptist Church was able to utilize resources from congregations in other states, notably the Baptist Men's Association. Groups from Texas and California provided meals and clean up assistance after the fire.

Blaming and Attribution: The Igniters

The growing literature on the social impacts of wildfire and the disaster literature more generally suggests that the attributions people make about the causes of a fire or other human disaster have an effect on the recovery process (Krannich et al 2002). In general the literature suggests that to the extent that people focus on the disaster being human "caused" (i.e. action,

inaction or negligence) recovery tends to be impeded as attention is focused on blaming the “guilty parties” (Kumagai et. al. in press). In light of this literature, we asked respondents what they believed were the “fundamental causes” of the two fires. In the case of the both fires, many respondents mentioned the person who allegedly started the Rodeo or Chediski fire as the fundamental cause. The multi-year drought and forest conditions (fuel load, forest health) were also listed as causes or contributing factors. On the latter point, respondents thought that mismanagement of National Forest land led to this catastrophic fire and that the ignition source was not that important; if that person hadn’t started the fire, someone else or something else would have started the fire. One Heber/Overgaard resident said:

...I really don't care what started the fires. I can tell you this- those fires would have started if [those] people had never been in Arizona. There would have been somebody with a careless campfire, somebody with a careless cigarette, it could have been a lightning strike; anything could have started those fires. My concern is not how they started; my concern is why were they [the fires] able to get so much of a jump on everybody? Why was there so much fuel and why was that forest allowed to get into that condition? The alarm clock has gone off...

Most respondents thought that the fires were preventable or controllable. In the case of the Chediski fire, they said it could have been prevented if the igniter hadn’t been “where she wasn’t supposed to be.” Respondents stated that it was well known throughout the area and the state that fire conditions were extreme and that public lands had been closed to entry. The alleged igniter was accused of being “stupid”-how could she have *not* known about the fire danger? Others thought that a lack of logging and thinning in the last ten to twelve years due to environmental appeals had led to a build-up of fuel and ultimately, to the fire getting out of

control. They added that the combination of weather and forest conditions ultimately made the fire uncontrollable; nothing more could have been done to stop the fire.

As noted above, in Heber/Overgaard in particular, many questions remained about the cause of the fire: Why were people in a closed area? Did the rescue helicopter literally “fan the flames” of the fire? Why didn’t the helicopter crew put out the fire when it first started? Why didn’t the BIA ask for assistance? Why were resources allocated as they were? What will be done with the burned wood? What will happen in the future? Was there enough done to stop the fire? Many were angry that the alleged igniter had not apologized yet. They felt that she hadn’t accepted responsibility for her actions and the damage that resulted.

Some residents stated that they were not angry anymore, that they had moved on. Yet they still had the above questions. Key informants who work in ministry and counseling said that people in the Heber/Overgaard area were still going through the grieving process. They thought that some of those who say they have moved on are actually in denial and will be feeling negative emotions at a later time. The field workers at times sensed an undercurrent of anger when talking with those who said they had moved on. This anger seemed to be directed toward the person who ignited the fire as well as federal firefighting agencies.

Expressed Needs

Residents were asked about material and non-material resources needed to deal with the fire and/or its aftermath. Some mentioned a need for more firefighting resources, but added that such resources were scarce at that time. Others commented that no amount of firefighting resources would have been effective due to the severity of the fire.

A few expressed the need for the persons who started the fires to offer an apology. Other than a need for accurate, timely information, most interviewees could think of any important resources that were lacking during and after the fire. Many residents particularly in the Heber/Overgaard and Pinedale/Clay Springs/Linden area were dissatisfied with the information available during the fire. One respondent said "...you can't get *enough* information to people who aren't here." There were daily briefings at the evacuation shelters, but these were described by some as uninformative and too general in nature. These briefings covered fire suppression progress and resource damage, but did not give evacuees the specific information they wanted: What had happened to their homes? As detailed previously, respondents thought that information from commercial radio and especially television, was inaccurate, untimely, sensationalistic, and lacked specificity to their respective areas.

Many stated that TV and radio reports were inaccurate and misleading and were focused on Show Low. It was difficult to find specific information on Heber/Overgaard and Pinedale/Clay Springs/Linden. Media reports about these areas were often wrong and exaggerated according to respondents. For example, according to interviewees, initial media coverage stated that Heber/Overgaard had "burned to the ground"; nothing was left. Evacuees were left with the impression that nothing was left of the town but ashes. Frantic phone calls made to residents who had stayed behind to fight the fire contradicted the media reports. The town had not been destroyed; some neighborhoods had burned, but many residential areas and the commercial area along the highway were still there.

In addition to radio and television reports and shelter briefings, many evacuees relied on personal contact with friends, relatives and others who stayed in the town during the fire. Local fire departments were inundated with phone calls from evacuees seeking information. Family

and friends who stayed behind gave updates to those who were away. However, in spite of the on-scene informants, information was occasionally misleading and inaccurate. This was due to the chaos of the situation, incomplete eye witness accounts, as well as the inevitable distortion from second and third hand accounts. Nonetheless, evacuees thought that this information from friends and relatives on the scene was the most useful source of information.

As mentioned previously, the delay in being notified about the status of their homes was distressing to evacuees, especially those in the Heber/Overgaard area where many homes were lost. Navajo County had set up a hot line, but when residents called, officials were not able to immediately tell them the status of their homes. According to informants, the delays in notification were due to the time it took for the County to verify physical locations of burned and damaged buildings. Fire department and other officials who stayed on site said that it took a while for the place to cool down (literally) before neighborhoods could be canvassed and properties linked to plat maps. Changes in the landscape made it difficult to recognize neighborhoods and match physical locations to map locations. Once areas were inspected and damage noted, the hot line worked well. One respondent noted, however, that the hot line could verify that your house had burned, but not that it had survived. This left some measure of uncertainty. This was another instance where on-scene informants were both a help and a hindrance. There were accurate reports of what had happened to some homes, but those who stayed behind were also confused by changes in the landscape. This resulted in false reports as well as conflicting reports on the status of homes and property.

Resources available to evacuees were generally perceived as adequate. There were some concerns about "freeloading". In some cases respondents felt that particularly in the immediate aftermath of the fire, donations of food and supplies were handed out to anyone who came by

without verifying actual need. Residents claimed that some people took more than they needed. Reviews on assistance agencies were mixed across the region affected by the fires with churches and the Salvation Army generally drawing praise and the Red Cross garnering mixed reviews.

The towns surrounding the impacted communities that set up shelters were applauded for opening their doors to evacuees. Towns provided shelter space for hundreds of evacuees as well as pets and livestock. Merchants gave discounts as well as free admission to movies and swimming pools.

One consistent theme from public safety officials at both the county and local level was the need for more and better communications equipment, particularly radios, in advance of any future such event. One capability cited as helpful for public safety was the ability of the local cell phone provider to give circuit priority to public safety officials.

Desired Future for the Forest

The desired future condition for the forest is partly expressed via interviewees' comments about the fundamental cause of the Rodeo and Chediski fires. Most respondents thought that undesirable, unhealthy forest conditions, i.e., many small diameter trees, were the main cause of the destructiveness and intensity of the fire. Respondents wanted to see a forest with more large-diameter trees and fewer small diameter trees. The latter were described as a contributing factor to high fuel loads and fuel ladders. Residents generally wanted to see a healthy, "appropriately" stocked forest. While some were vague about how such a forest might look, others were specific and described the park-like setting of pre-European settlement ponderosa pine forests. Nearly all agreed that there were too many small diameter trees on both public and private lands that created densely stocked, flammable forests. The means to achieve this desired condition generally included logging; thinning and prescribed fire.

If there is one area of agreement among virtually all interviewees, it is that the forest in the study area is not currently in a “healthy” condition. However, to understand people’s perceptions for how to return the forest to a healthy condition, one must understand their historical perspective on how it got to an “unhealthy” condition in the first place. It is on this issue that there is some divergence in opinion among those interviewed for this study. For most people interviewed, the unhealthy condition of the forest is a function of the high number of acres with dense stands of relatively small diameter trees (or at least the presence of “brush” even in stands that do contain some larger diameter trees). In addition to this, some others talked about wildlife habitat conditions and the presence of a diversity of wildlife itself.

For most interviewed, current unhealthy forest conditions were chiefly seen as a function of the reduction of active management generally and logging in particular on national forest lands. For others, decades of fire exclusion is also seen as an important contributing factor.

...[The Forest Service] did not have the money for thinning or the cutting because their budget has been whittled down to nothing. They have not had a fire for years and years and years so down went their budget. So have we really been thinking about this? We were held hostage by environmentalists and the spotted owl out there. We're not good citizens; we're not good stewardess of the land. The whole western United States is burning and here we sit. I'm telling you about my story. I'm sure the people in Colorado would tell you the same thing.

Local environmentalists, however, rejected the notion that reduced logging is the problem. They placed the blame on past logging practices together with fire exclusion, arguing that the net effect of the agency’s timber sale program and “questionable silviculture” over the past fifty years or so was the removal of too many large trees and harvest blocks that were too

large and/or in the wrong location relative to critical habitat. For them forest health was about more than just the trees. They listed habitat conditions and water quality as components as well.

Respondents of all persuasions were aware of the challenges facing a return to pre-European settlement conditions. The amount of work needed to reach the desired condition was seen as daunting. Some thought an emphasis on cleaning up the residential interface areas would be a good place to start. One informant who assists landowners with property cleanup stated that on a recent project, 150 tons of material was removed from three acres. Respondents expressed doubt about the disposal, marketable or otherwise, of thousands of tons of material. At present, informants indicated there are no local mills in the area that can process small diameter material. Further, respondents stated a need to develop products and a market for this material. There is at least one local group working toward the establishment of a small scale timber industry for the area aimed to utilize small diameter material but this was still in the idea stage at the time of the field work.

Some interviewees, particularly in the Show Low/Pinetop/Lakeside area were in favor of increased prescribed burning pointing to the success the White Mountain Apache tribe has had with its burning program. Many in this category said that they used to object to the smoke and inconvenience from prescribed burns but in the wake of the fire, see such burns in a "new light". Others, particularly from the Heber/Overgaard area were more skeptical about the advisability and efficacy of prescribed burning. While it was recognized that frequent, low-intensity burns were part of the pre-European landscape, they thought that prescribed burning to change forest conditions would be difficult to accomplish. Again, the magnitude of the work needed made burning difficult to accomplish according to this view. Additionally, advocates of prescribed

burning admitted that existing fuel loads were too high to achieve low-intensity ground fires on many sites. They said that thinning and disposal of material needed to be done before burning.

Another challenge is changing people's attitudes about cutting trees and "natural" forest conditions. Respondents stated that they and their neighbors were reluctant to cut trees; the forest is what attracted them to the area. Some were critical of part-time residents, whom they stated weren't interested in cleaning up and didn't understand the risk associated with existing "unnatural" forest conditions:

...Most people come up here from either Phoenix or Tucson and when they see these trees they say, "Don't cut my trees." They will tell you they like the cushion of the pine needles underneath their feet as they walk. [In] my opinion it's just like walking on gasoline... This [Forest Lakes] will blossom to over 1,000 people in the summertime. When you go back into the valley, you do not think about the danger of the fire. All your mind tells you is there [are] beautiful trees out there and the animals. ...Just sitting here looking out the window, I love what I see in the beautiful green trees. I cannot see flames blowing through them, but because of my experience with wildfires, I can tell that that brush needs to be cut a little higher and that we need to keep the weeds down, and most people do not look at that. They come up here just to enjoy themselves and that's it...

Salvage

Residents (both full-time and seasonal) of the study area interviewed generally wanted the burned timber to be salvaged if possible. However, there was also the general consensus that any efforts at salvage logging would be stopped or severely hampered by "outside environmentalists". Salvage logging was seen to mean the employment of many people and the

provision of a reasonably steady income flow for a number of years, most residents thought. Beyond the need for more employment in the county and a presumed return of the logging industry, most residents thought that the loss of salvageable timber to insect and disease damage was wasteful and wrong. Old, new, and part-time residents interviewed generally had a utilitarian outlook on resource use; they wanted to see the burned timber used and not “wasted”. Local environmentalists expressed more concern with long term habitat conditions and water quality than salvaging dead material. It seems likely that *local* environmentalists’ reaction to salvage proposals would depend on the details of such proposed actions.

In addition to litigation, it was believed by many interviewees that the Forest Service’s own NEPA process would result in the loss of salvageable timber. Many respondents stated that the burned timber had a short “shelf-life” and the lengthy NEPA and sale processes would not be over until long after the wood was not salvageable. Respondents generally favored a system/process that allowed for the quick removal of timber:

...Well, I think they are moving more rapidly on the [Fort Apache] reservation than on the [Forest Service] side of things... I’m not an expert, but the reservation doesn’t have the same red tape that the Forest Service does. And as I’m sure you are aware, we’ve done a number of efforts, petitions, resolutions, anything we can do to help on a national level bring the attention that this is an issue that needs immediate response. It can’t wait for the normal political process, because by then we’ve lost [the trees]. We’ve got then a bigger problem, because then we got wood out there that has no value. Right now there is some value to that wood that is basically not alive anymore. It’s dead, but at least a lot of it is useable...But by the time it’s gets back to Washington or somewhere else and it’s viewed on paper rather than in person, maybe it

loses some of that message. But if you see it in real life, you would be the first to say, yeah, we've got to get that out of there...

Rehabilitation: Scale and Effectiveness

Many respondents throughout the study area were not familiar with the type and amount of rehabilitation efforts on the burned area. The most oft-mentioned activities were straw mulching of areas with no vegetation and the cutting of hazard trees. Some mentioned road reconstruction also. Respondents mentioned the many volunteer groups that had taken part in rehabilitation activities in the previous months. Most respondents could not comment on the effectiveness of efforts that had taken place so far. There was a concern that some measures such as reseeding would not be effective if the drought continued. Others expressed doubts over road repair. They thought it was unnecessary, costly and an attempt by the Forest Service to limit access and/or close roads in the National Forest in general.

Another concern about rehabilitation was the extent of the work needed. People expressed doubt that given the hundreds of thousands of acres burned, little could be done "to make a dent". Even treatment of the highest priority/risk areas meant treatment of tens of thousands of acres, an unlikely prospect before the arrival of fall/winter rain and snow. As mentioned above, flooding was a major concern among residents throughout the area. A number of respondents had already experienced flooding around their homes and neighborhoods and properties as a result of the summer "monsoon" rains. Many interviewees worried about the coming winter months and future years, nervously comparing the scale of the potential problems to what they perceived as inadequate resources to mitigate such problems. In terms of flood hazards to private lands, a number of interviewees praised the efforts of local Natural Resource

Conservation Service officials in attempting to assist private landowners, but expressed concerns about a “holdup” in the availability of federal funds, which was hampering such efforts at the time of the field work.

Conclusions

Given the scale of the Rodeo Chediski fires and the resultant social impacts, this analysis should be characterized as preliminary. An attempt was made to document the major local impacts in directly affected non-reservation communities within the context of a limited time frame and budget. There is anecdotal evidence that strongly suggests that the negative impacts of this fire event are far more severe and potentially far longer term for communities within the Fort Apache Reservation, which were not studied here. However, to the authors’ knowledge, analysis of those potentially very serious impacts has yet to be carried out. There is also reason to expect that residents of other non-reservation communities not in the direct path of the fire such as Snowflake, Payson, and Holbrook may have suffered indirect impacts, but again the scope of this analysis did not allow for them to be documented. There is also a time dimension to social impacts. This assessment was well timed to document impacts after the immediate excitement and disorganization caused by the fires had dissipated, but before individuals’ memories of specific events had faded. It would be very useful to follow up this analysis with long term social monitoring using both statistically based surveys and additional qualitative interviews over a period of years.

This report will conclude with a brief discussion of six issues identified in the analysis, which appear to be of long-term import for the communities studied, and land management agencies whose policies affect these communities.

1. Preparedness

Residents, city officials, and fire managers alike in the communities impacted by the fires admitted to a certain amount of complacency about firesafing homes and property before the fire. This was attributed in part to apathy, denial, and a desire for and attraction to a forested landscape. The fires certainly spurred many homeowners to take firesafing measures in the period immediately before the fires arrived. What remains to be seen is if the communities and residents will continue with firesafing measures or if they will become complacent again now that the immediate threat is gone.

Interviewees thought that there was a likely possibility of a future fire of a similar nature, and stated that the forest needed to be “cleaned up” to prevent catastrophic fires. However, when it came to their homes, properties and communities, there were mixed opinions about the fire danger posed by vegetative/debris conditions around developed areas.

... Well, I have cut down a couple of trees right out front, but they were lightning rods- very tall trees- and they were all by themselves. I did get rid of those two trees just recently. I am trying to encourage my son who lives right next door and does not want any trees cut down- their trees are close- and I am trying to encourage them to cut them back. I did make a clearer area than I did have around my house... The fire department's grant has allowed them to form teams... that will go around and mark their lots showing them which trees to trim or cut. Then it is up to their discretion if they want to do that [cut trees], but most of them are following through with the fire

department suggestions. They have been very cooperative. There has not been any hesitation about cutting a tree that I have been loving for years, but is too close to the house. People have actually built porches around the trees where they go right up through the porch into the house because of the beauty of it.

While some said they were now motivated to clean up their properties, others held the belief that since much of the surrounding forest had burned, the threat of catastrophic fire for that community had been drastically reduced. A county extension agent who works with firesafing programs said:

...In truth, people didn't believe it would ever happen. The unfortunate thing now is there are people saying we've had our 100-year fire, it won't happen again...there's a lot of mythology out there. People say a crown fire can never start in a community because the fire departments say they will knock it down in a hurry. .

As a result, many indicated that they were not going to undertake additional firesafing measures. The primary reason was that there was nothing left to burn around the house and property- the fires had “burned it all”. Others expressed some skepticism about the effectiveness of such measures in the face of the extreme fire behavior. Many people had stories about houses that should not have burned but did, and vice versa. For example, many of the residents of Old Overgaard had not done any firesafing prior to the fire; residents of the area stated that it wasn't necessary because there were few trees in that subdivision, yet 12 structures burned. While the cause of this damage is debatable- ground fire, plume collapse, or alleged inaction by firefighters- this example also illustrates the perception held by some that homes in forested areas are at risk, while those in non-forested areas are not.

Some interviewees also said that firesafing measures around homes would not be effective without broader firesafing projects in the neighborhood, community, and national forest. Part-time residents were singled out as a group unlikely to undertake preparedness work, thus jeopardizing larger neighborhood and community efforts. One Show Low/Pinetop/Lakeside city official stated:

...Having the locals understand how critical even their own property maintenance is important, not only for them, but for their neighbors. As you learn in this kind of event, one person maintaining their property when all around them does not doesn't help you a bit. Because the fires not going to go, "This person has maintained their property, let's skip that". If everything around you has not (cleaned up), you're going to have the same impact as your neighbor. That's the other education issue that I think is not really understood still after this fire, is that I think a lot of people still think well yeah, if I do this kind of maintenance, if I do some thinning, if I do some cleaning, whatever, it may help, but it may not, so I'm not sure it's really worth it. And so getting a better message of how your percentage of success goes way up when you do that, that's the thing I think we can do a better job [at] still.

The need for thinning and fuel removal on federal lands was seen as vital- a future catastrophic fire is likely to come from public to private lands. Several interviewees from Heber/Overgaard mentioned that a Forest Service project to cleanup the interface had been stalled due to litigation. Similar projects have taken place or are on line in the Show Low/Pinetop/Lakeside area. When asked about the role of the Forest Service in firesafing communities, one interviewee said:

...One of the things they [Forest Service] are going to have to do is clean up the interface. They are going to have to cleanup the places that are on the other side of the fence. People are not going to be tolerant of that. It came up in the meeting today, "I spent all of this time and money cleaning up my place, then right across the fence [on Forest Service land] is not." "Well, that is true," was the Forest Service's response. We cannot do that. The ecosystem will not let us to do that...

Firesafing efforts were more evident in areas that were not directly impacted by the fire, such as Forest Lakes. This community had a "Clean and Green" firesafing program in place for several years before the fire, and participation increased after the fire.

...Immediately after the fire, this just magnified. Everybody wanted to get into the program. Before the fire, people did not want to cut their trees. That is why they came here, to see these wonderful trees. And all at once they realize what a fire danger it could be if you did not clean your lot. Even today, people are still cleaning. It's tremendous- the impact and fear it put into people- a need to do something. Yes, it is beautiful, but it is also dangerous.

While residents of Forest Lakes thought that the fire danger to their community was greatly reduced, they were concerned about the areas to the southwest of the community that had not burned. They wanted the Forest Service to undertake fuel hazard reduction work on agency lands in this area.

Opinions among interviewees in Show Low/Pinetop/Lakeside concerning both the desirability and feasibility of household and neighborhood level firesafing activities were mixed. With some seeing the need as urgent and others not so sure "it would really help" or could really happen at a scale to be really meaningful. Some planners and city officials in these communities expressed the need to get "outlaw developments" under control, meaning those housing

developments which do not conform to standards of egress and other codes aimed at public safety in general and fire protection in particular.

Fire departments, communities and homeowners' associations in the area affected by the Rodeo-Chedisiki fires realize the challenge of firesafing in the interface areas: taking advantage of the recent experience while maintaining motivation and interest in doing such work in the wake of a close call, as well as dispelling beliefs about future fire risk.

...Apathy- they don't know, they don't care. It was not a threat right now. It is a whole lot like dealing with anything. Unless we have had some personal experience at it, we are probably not going to pay a lot of attention to it. A very good example of that [are] seat belts. They had to pass a law to get us to wear them and it is common knowledge that seat belts save lives, not just a few lives; they may save a lot of lives. Are there people that will be killed if they're wearing seat belts? Yes! Are there houses that are going to burn if they fix them up? Yes! They can do all this stuff and still those things are going to happen but when you look at the big picture a lot of people are going to be saved if they wear their seat belts and a lot of homes are going to be saved if they clean around their homes. It may just take a law to make people do it I believe people look to us to lead a charge and I think that we are going to have to get them onboard with us and get them excited about it. If you did not hear a lot about Disneyland you would not go to Disneyland. When you hear a lot about it and how great is, you really want to go. That is how we need to [work] with these folks, we have to make them feel really good about this and really get them onboard with us so they are excited about it.

2. National Forest Conflict

The long-term national conflict over federal forest land management shows no particular sign of dissipating. If anything, recent fire events in the western US and their aftermath have simply been the latest chapter in a protracted struggle. Local level collaboration inclusive of a wide range of values and perspectives appears to many observers to hold the greatest potential for alleviating this conflict over the long-term (Weber, 2003; Daniels and Walker, 2001). The potential for increased collaboration about national forest decision-making in the study area appears on the basis of this preliminary assessment to be reasonably high. There appears to be fairly wide spread agreement, particularly in light of the fire event, that current forest conditions are not healthy. The challenge would be to define some forest management actions that, within the context of applicable federal laws would not be seen by the (local and national) environmental community as a “return” to the harvest of large trees simply for reasons of short-term profitability, or by advocates of active forest management as “too little, too late”. There is also the issue of finding a way for any harvested material to “pay its way out of the woods”. These challenges which are faced in many places throughout the West are significant and ongoing.

3. Conflict over Firefighting

The issue of the sometimes difficult relations between Type 1 firefighting teams and local firefighters, officials and home owners is hardly confined to this particular case. Although not much specific research has been done on this, it is a more complicated issue than what appears on the surface. On the one hand, few would disagree that a large-scale fire emergency requires a command and control structure and knowledge of wild fire dynamics not always present in local fire departments. Many fire situations also require a “big picture” view and sadly, triage-type

decisions for individual “indefensible” homes and subdivisions. There is also almost unavoidable confusion and frustration at the ground level (not unlike that of the “fog of war”) when a large-scale military-like operation is mobilized and particularly when it attempts to utilize or interface with personnel whose training, orientation, and background are very different from those of its own people. According to a local fire chief:

... Their [locals] thinking is that there is not anything that they cannot do. They can go out and get on a flatbed truck and meet this fire on its own terms and fight it with shovels and burlap bags. That is not going to happen, not the fire we are talking about. [That is what they] had done back in the '30s or '40s. ... We are dealing with a different kind of fire now. We are dealing with a different fuel load than they ever had to experience before. So for them thinking [that they can] just go out there really shows me a lack of intelligence or keeping up with current events. They need to understand what they are dealing with. So we drew a great deal of criticism during this fire because we would not allow people to go out there [when] we did not know anything about [their firefighting background].

On the other hand, there is evidence that Type 1 teams do in some cases, have a tendency to ignore local experiential knowledge, particularly that of road and structure locations when they arrive on the scene of a fire (Rodriguez Mendez et al., 2003). There is also a tendency on the part of federal fire fighters to “depersonalize” a fire event much as a military commander would depersonalize a battle plan. Such depersonalization, while undoubtedly helpful for clear analytic and strategic thinking, grates local residents and local firefighters whose particular homes and special places are at risk. One Forest Service district level fire fighter described a conversation he had with a Type 1 crew member in which the Type 1 person told him he was

taking the fire “too personally” and his reaction was that the Type 1 team member “was not taking it personally enough”.

There also appear, particularly given the current national political environment, to be differences in risk tolerances between Type 1 teams and many local firefighters. The Forest Service in particular has in recent years, endured strong criticism even on the floor of Congress when its personnel have died fighting forest fires. Federal firefighting agencies have made it very clear that they place the value of protecting human life, including that of firefighters, above that of protecting property. This policy is sometimes translated at the ground level as staying out of a development or neighborhood that might well have been saved, but at what risk and to whom? What is the proper balance of responsibility, particularly when homeowners and neighborhoods may not have “firesafed” properties in advance of the fire? In many cases the issue is not so much the immediate safety of firefighters who may be foaming structures or digging line, but the ability to notify them all in time for them to reach a safety zone in the event the fire makes a “run”.

The end result of these policies, orientations and considerations often rankles or in some cases enrages local firefighters and residents whose own homes and neighborhoods hang in the balance of specific firefighting decisions. From their perspective, the federal land managers have “allowed” the national forest to become unnecessarily prone to catastrophic fires and then when such a fire “builds up a head of steam” and threatens their neighborhood, the federal firefighters seem reticent to take what locals think is appropriate action. In some cases, federal decisions prevent local firefighters, under the authority of the Incident Command System, from fighting the fire in particular places themselves.

As noted in the body of this report, most of those interviewed for this study were very happy with the federal firefighting effort. They also respected the local Forest Service district personnel and stated that the communities and the Forest Service had good working relationships. It should be acknowledged however that others, particularly in some communities, were not happy with the federal firefighting effort and that the unhappiness of some seems likely to detract from positive federal/local relationships in some quarters in the area. It should also be noted that similar dynamics might well repeat themselves should the misfortune of another large fire occur. It therefore seems appropriate that this issue be dealt with openly, honestly and constructively as the communities and the Forest move forward in the fire recovery process.

4. Future Evacuations

As was noted in the body of the report, the evacuations of all the communities were, by most accounts very smooth and free of major operational problems. However, there is evidence from the interviews that should another fire occur, some local residents- perhaps a sizable number- would resist another evacuation. There were two general reasons given for this. One had to do with the issue addressed in item three. Those in some particular areas who felt that the fire had not been fought effectively by federal firefighters expressed a determination to stay behind the next time and defend their own homes and communities. The other reason given was that to some, particularly in communities that did not burn, the evacuations seemed like "overkill".

Another evacuation issue is the lead-time for the evacuation. One law enforcement official commented that there was plenty of time to execute a "perfect" evacuation during this incident, but next time, there may not be enough time. These evacuation issues have obvious public safety implications for the future.

5. Flooding

Residents from subdivisions and communities that experienced fire damage expressed concern over flooding. While the concern about flooding is widespread, the actual threat may not be. Only Buckskin Wash has been identified as an area with a high flood potential by the NRCS. There are about five homes at risk from flood damage in Buckskin Wash, a risk that will exist for two to three years with damaging floods most likely to occur during the summer “monsoon” season. Navajo County has identified several other washes in Heber/Overgaard and Pinedale/Clay Springs/Linden that are at risk for flooding, mud flows and debris flows during the monsoon season. Monitoring and a storm event warning system may help alleviate residents’ concerns. As with preparedness, people may become complacent about flood mitigation measures. A mild monsoon season that results in little flooding may make the threat fade along with protective straw bale and sandbag structures.

6. Mental Health

As noted previously, emotional impacts resulting from pre-and post-fire events affected many people and may continue to do so for some time. Emotional impacts were listed as one of the most significant impacts of the fires by a large number of interviewees. Interviewees admitted to feeling bitter, restless, angry or uneasy. In the wake of the fire, the White Mountain Recovery Partnership (WMRP) undertook an extensive door-to-door effort in the affected communities to notify residents of free mental health counseling. Most of those interviewed were aware of the services and thought they were needed. However, they did not say they or others had used the services; many people relied on friends, neighbors, relatives and ministers for comfort, solace and advice. The counseling services provided by WMRP in the immediate post-

fire period were vital and these services should be continued in order to deal with intermediate and long-term emotional impacts. Given the existing drought and forest conditions, these services may also be necessary to help people cope with anxiety and stress related to future fire events. The WMRP was able to gear up quickly, however, some interviewees thought that counseling services should be part of any emergency preparedness plan and should include training for local mental health practitioners and paraprofessionals such as ministers and teachers in disaster counseling.

APPENDIX A

Table 1.

Navajo County Unemployment Rate 1999-2002*					
	June	July	August	September	Average**
1999	14.8	15.1	13.1	11.0	13.1
2000	13.4	13.3	11.7	9.1	11.4
2001	12.7	13.0	9.8	8.6	10.5
2002	12.4	14.5	11.0	9.6	10.8

Table 2.

Heber/Overgaard Unemployment Rate 1999-2002*					
	June	July	August	September	Average**
1999	10.4	10.6	9.2	7.6	9.2
2000	9.2	9.2	8.0	6.2	7.9
2001	8.8	9.1	6.8	5.9	7.2
2002	8.6	10.1	7.6	6.6	7.4

Table 3.

Pinetop-Lakeside Unemployment Rate 1999-2002*					
	June	July	August	September	Average**
1999	4.3	4.4	3.7	3.1	3.7
2000	3.8	3.8	3.3	2.5	3.2
2001	3.6	3.7	2.8	2.4	3.0
2002	3.6	4.2	3.1	2.7	3.1

Table 4.

Show Low Unemployment Rate 1999-2002*					
	June	July	August	September	Average**
1999	5.4	5.5	4.7	3.9	4.7
2000	4.8	4.8	4.1	3.1	4.1
2001	4.6	4.7	3.4	3.0	3.7
2002	4.4	5.3	3.9	3.4	3.8

*Final results for 1999; preliminary results 2000-2002.

**Yearly average.

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